

**UNIVERSITI TEKNOLOGI MARA**

**THE INFLUENCE OF BRONCHIAL  
ASTHMA ON PHYSICAL HEALTH,  
ACTIVITIES, AND EMOTIONAL  
HEALTH OF ASTHMATIC  
CHILDREN AND THEIR PARENTS:  
RELIABILITY AND VALIDITY OF  
THE MALAYSIAN VERSION OF  
CHSA**

**MARYAM S E HUSSEIN**

Thesis submitted in fulfillment  
of the requirements for the degree of  
**Master of Science**

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## AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student : Maryam S E Hussein  
Student I.D. No. : 2010354539  
Programme : Master of Science (Clinical Pharmacy)  
Faculty : Faculty of Pharmacy  
Thesis Title : The Influence of Bronchial Asthma on Physical Health,  
Activities and Emotional Health of Asthmatic Children  
and Their Parents: Reliability and Validity of the  
Malaysian version of CHSA

Signature of Student :  .....

Date : May 2015

## ABSTRACT

There are various developed instruments to assess impact of asthma among asthmatic children but few of these instruments were developed in paired versions of child and caregiver. Children Health Survey for Asthma is one of the instruments that have paired versions, parent version (CHSA) (item,  $n = 48$ ) and child version (CHSA-C) (item,  $n = 25$ ). The aims of the present study were to establish the validity and reliability of the Malaysian versions of M-CHSA and M-CHSA-C, to assess the effect of asthma on Malaysian asthmatic children and their parents, to present the difference of child's and parent's report about the effect of asthma on their lives, and to investigate the differences, effects and relationships of socio-demographic and medical data with the health outcomes from asthmatic children and their parents. Questionnaires were translated to Bahasa Malaysia using previously established international guidelines. Data from 180 pairs of asthmatic children (7-16 years old) and their parents were analyzed using two method; Classical method where Internal consistency reliability was determined using Cronbach's alpha, and construct validity was determined by factor analysis (IBM SPSS version 20), and modern test theory based on Rasch-Model analysis (Bond & Fox steps software). Wilcoxon Signed-ranks test was used to test the difference between children's and parents' reports on the effect of asthma on their lives. Mann-Whitney Test, Kruskal-Wallis test, correlation analysis, multiple linear regression, ANCOVA, and logistic regression were used to investigate the differences, effects and relationships between socio-demographic data and domains, and correlation between domains themselves for the asthmatic children and their parents. The results showed that both reliability and factor analysis reveal an acceptable reliability and a good construct validity of the scales. And the reliability of both translated questionnaires were further supported by a strong and moderate correlation between the scores on the initial and the repeat administration of M-CHSA and M-CHSA-C. All items measures for both translated questionnaires are fitted to Rasch-Model. These results showed that the translated questionnaires have good reliability and validity for research purpose. The results showed that the highest score in family's activities domain for parent version while in child version were highest score in the child's activity domain. Also, there were significant differences between child's and parent's report in child's physical health and child's emotional health. There were significant differences in child's activity in different smoking home environment, level of child's education, and asthma duration. Also, there were significant differences in child's emotional health with different parent's gender, parent's age, and parent's ethnicity. There was significant difference in child's physical health with different travelling time. There were significant negative weak correlation between child's activity and child's age and asthma duration, and between child's emotional health and asthma duration. There were significant positive moderate correlations between all domains. Asthma duration and monthly income were the predictors for child's emotional health. Monthly income for the family affected child's emotional health while ethnicity affected family's activity. Finally, child's emotional health in non-smoking home environment was 4.055 times better than in smoking home environment. The evidences presented in this study supported the idea that numerous factors such as socio-demographic factors are capable of influencing HRQoL of asthmatic children and their parents. These types of studies are important for successful medical care for asthmatic children.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 PREVALENCE OF ASTHMA**

Asthma is one significant health problem that results in high morbidity and mortality. In general, there were about 300 million persons affected by asthma around the world (Global Initiative for Asthma (GINA), 2012). Prevalence of asthma varied widely from country to country whereby the prevalence of asthma in low and middle income countries was higher than in high income countries (World Allergy Organization (WAO), 2011). The National Heart, Lung, and Blood Institute (NHLBI) estimated that the prevalence of asthmatic patients in the United State reached to more than 17.5 million adults and 7.1 million children aged 0 – 17 years old (National Institute of Health (NIH), 2011). In addition, Centers for Disease Control and Prevention (CDC) Mortality and Morbidity Weekly Report, titled “Self-reported asthma among high school students - United States”, reported that 18.9% of high school students had asthma, in which 16.1% of them with uncontrolled asthma, and 37.9% of those having had an asthma attack during the 12 months preceding the survey (CDC, 2003). Furthermore, in recent survey by National Center for Health Statistics (NCHS) and CDC reported asthma prevalence in the United State according to age, sex, and race; whereby asthma prevalence was little bit more in children (9.3%) than in adult (8%), in female was 9.5% while male was 7.0%, and in black (11.9%) was more than in white (8.1%) and Hispanic (7.0%) (NCHS & CDC, 2012). In 2004, 10% of people in Australia reported that they had asthma which was equivalent to about 2 million people of Australian population having asthma. The prevalence of asthma was higher in people aged 75 and over. The prevalence of asthma in adult was 10 - 12% and in children was about 14 - 16%. The National Asthma Council Australia reported that asthma prevalence was more in boys than in girls. However, in adults, asthma was more common in women than in men (National Asthma Council Australia, 2006). National Asthma Council Australia published new data from Australian Bureau of Statistics (ABS) about the mortality of asthma. In total, 394 deaths were recorded in 2012 and about 60% of deaths occurred in people